IN THE CLAIMS:

1. (Previously Amended) A high pressure piston pump, comprising:

a housing having a low pressure fuel inlet and a high pressure fuel outlet;

at least two pistons disposed in the housing;

a driveshaft for supplying power to drive the at least two pistons; and

a bypass valve fluidly connected to one of the at least two pistons to deactivate the one piston, wherein the piston to which the bypass valve is connected to has a surface area that is different than a surface area of the other piston of the at least two pistons.

2. (Original) The high pressure piston pump of claim 1 wherein the bypass valve includes a solenoid for opening and closing the bypass valve.

3. (Original) The high pressure piston pump of claim 2 wherein the bypass valve is normally open such that the at least one piston is normally deactivated.

4. (Currently Amended) A high pressure piston pump, comprising:

a housing having a low pressure fuel inlet and a high pressure fuel outlet;

three pistons disposed in the housing;

a driveshaft for supplying power to drive the ~~at least two~~ three pistons; and

a bypass valve fluidly connected to at least one of the ~~at least two~~ three pistons to deactivate the at least one piston, wherein the bypass valve is fluidly connected to only one of the three pistons, and wherein the piston to which the bypass valve is connected to has a surface area that is different than a surface area of the other pistons.

5. (Previously Amended) A high pressure piston pump, comprising:

a housing having a low pressure fuel inlet and a high pressure fuel outlet;

at least two pistons disposed in the housing;

a driveshaft that drives the at least two pistons; and

a bypass valve fluidly connected to one of the at least two pistons to deactivate the one piston, wherein the piston to which the bypass valve is connected to has a surface area that is larger than a surface area of the other piston of the at least two pistons.

6. (Original) The high pressure piston pump of claim 5 wherein a surface area of the piston to which the bypass valve is connected is approximately twice the surface area of each of the other two pistons.

7. (Original) The high pressure piston pump of claim 2 wherein the solenoid is activated by a signal from an engine electronic control unit.

8. (Original) The high pressure piston pump of claim 1 wherein the high pressure piston pump is a radial type piston pump.

9. (Original) The high pressure piston pump of claim 8 wherein the driveshaft includes a cam portion for driving the at least two pistons.

10-13. (Canceled Without Prejudice or Disclaimer)

14. (Previously Amended) A high pressure radial type piston pump, comprising:

a housing having a low pressure fuel inlet and a high pressure fuel outlet;

three pistons disposed in the housing;

a driveshaft for supplying power to drive the three pistons; and

a bypass valve fluidly connected to one of the three pistons to deactivate the one piston, wherein the piston to which the bypass valve is connected to has a surface area that is different than a surface area of each of the other pistons.

15. (Original) The high pressure radial type piston pump of claim 14 wherein the bypass valve includes a solenoid for opening and closing the bypass valve.

16. (Currently Amended) A high pressure radial type piston pump, comprising:

a housing having a low pressure fuel inlet and a high pressure fuel outlet;

three pistons disposed in the housing;

a driveshaft that drives the three pistons; and

a bypass valve fluidly connected to one of the three pistons to deactivate the one piston, wherein the bypass valve is normally open, the bypass valve permitting fluid to flow through the bypass valve when the valve is not actuated such that the one piston is normally deactivated.

17. (Original) The high pressure radial type piston pump of claim 14 wherein the one piston to which the bypass valve is connected has a surface area that is larger than a surface area of each of the other two pistons.

18. (Original) The high pressure radial type piston pump of claim 17 wherein a surface area of the one piston to which the bypass valve is connected is approximately twice the surface area of each of the other two pistons.

19. (Original) The high pressure radial type piston pump of claim 15 wherein the solenoid is activated by a signal from an engine electronic control unit.

20. (Original) The high pressure piston pump of claim 14 wherein the driveshaft includes a cam portion for driving the three pistons.

21-32. (Canceled Without Prejudice or Disclaimer).

33. (Currently Amended) A method of varying the flow output of a high pressure piston pump having at least two pistons comprising:

pumping fluid by a first piston of the at least two pistons, the first piston having a first surface area;

pumping fluid by a second piston of the at least two pistons, the second piston having a second surface area different from the first surface area; and

deactivating one of the at least two pistons wherein the one piston is deactivated by directing fluid displaced by the one piston to a normally open bypass valve that permits fluid to flow through the valve when the valve is not actuated.

34. (Previously Amended) The method of claim 33 wherein the bypass valve directs the fluid to a low pressure area of the pump.

35. (Previously Amended) The method of claim 33 wherein the fluid displaced by the at least one piston is fuel for the engine.

36. (Original) The method of claim 35 wherein the fluid displaced by the at least one piston is hydraulic oil.

37. (Original) The method of claim 33 further comprising closing the bypass valve to reactivate the at least one deactivated piston.

38. (Previously Amended) A high pressure fuel injection system, comprising:

a source of fuel;

a low pressure pump;

a high pressure piston pump, the low pressure pump being disposed between the fuel source and the high pressure piston pump;

a fuel rail including a plurality of fuel injectors, the high pressure piston pump being disposed between the low pressure pump and the fuel rail; and

a fuel return line connecting the fuel rail to a low pressure side of the high pressure pump;

wherein the high pressure piston pump comprises a housing having a low pressure fuel inlet connected to an output of the low pressure pump, a high pressure fuel outlet connected to an

input of the fuel rail, at least two pistons disposed in the housing, and a bypass valve fluidly connected to one of the at least two pistons to deactivate the one piston, and wherein the one piston to which the bypass valve is connected to has a surface area that is different than a surface area of the other piston of the at least two pistons.

39. (Original) The high pressure fuel injection system of claim 38 further comprising a pressure sensor connected to the fuel rail.

40. (Original) The high pressure fuel injection system of claim 39 further comprising a pressure regulator connected to the fuel rail.

41. (Original) The high pressure fuel injection system of claim 38 wherein the high pressure piston pump is a radial type piston pump.

42. (Currently Canceled Without Prejudice or Disclaimer) The high pressure fuel injection system of claim 38 wherein the high pressure piston pump is an axial type piston pump.

43. (Currently Amended) The high pressure fuel injection system according to claim 38, wherein the bypass valve includes a normally open valve that permits fluid to flow through the valve when the valve is not actuated.

44. (Previously Added) The high pressure fuel injection system according to claim 43, wherein the bypass valve includes a solenoid adapted to open and close the bypass valve.

45. (Previously Amended) A high pressure fuel injection system, comprising:

a source of fuel;

a low pressure pump;

a high pressure piston pump, the low pressure pump being disposed between the fuel source and the high pressure piston pump;

a fuel rail including a plurality of fuel injectors, the high pressure piston pump being disposed between the low pressure pump and the fuel rail; and

a fuel return line connecting the fuel rail to a low pressure side of the high pressure pump;

wherein the high pressure piston pump comprises a housing having a low pressure fuel inlet connected to an output of the low pressure pump, a high pressure fuel outlet connected to an input of the fuel rail, at least two pistons disposed in the housing, and a normally open bypass valve fluidly connected to one of the at least two pistons to deactivate the one piston.

46. (Previously Added) The high pressure piston pump of claim 5, wherein the bypass valve includes a solenoid for opening and closing the bypass valve.

47. (Currently Amended) The high pressure piston pump of claim 46, wherein the bypass valve is normally open, the bypass valve permitting fluid to flow through the bypass valve when the valve is not actuated such that the at least one piston is normally deactivated.

48. (Currently Canceled Without Prejudice or Disclaimer)

49. (Previously Added) The high pressure radial type piston pump of claim 16, wherein the bypass valve includes a solenoid for opening and closing the bypass valve.

50. (Previously Added) The high pressure radial type piston pump of claim 16, wherein the one piston to which the bypass valve is connected has a surface area that is larger than a surface area of each of the other two pistons.

51.(Previously Added) The high pressure radial type piston pump of claim 50, wherein a surface area of the one piston to which the bypass valve is connected to is approximately twice the surface area of each of the other two pistons.

52.(Previously Added) The high pressure radial type piston pump of claim 49, wherein the solenoid is activated by a signal from an engine electronic control unit.

53.(Previously Added) The high pressure radial type piston pump of claim 16, wherein the driveshaft includes a cam portion that drives the three pistons.

54. (New) The high pressure piston pump of claim 1, wherein the at least two pistons comprise respective surface areas reciprocating on a common plane generally orthogonal to the driveshaft.